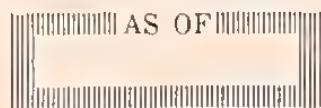


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WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO

and
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS



U.S. DEPARTMENT of AGRICULTURE * SOIL CONSERVATION SERVICE

Collaborating with
COLORADO STATE UNIVERSITY EXPERIMENT STATION
STATE ENGINEER of COLORADO
and STATE ENGINEER of NEW MEXICO

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HOW WILL AGRICULTURAL WATER USERS PUT EXTRA RUNOFF TO WORK?

By Brice Boesch -- Irrigation Engineer

A COMMON PRACTICE IS TO LET EXCESS IRRIGATION WATER RUN DOWN THE FURROW AS LONG AS IT IS AVAILABLE. THE THEORY IS THAT THIS WILL STORE MORE WATER IN THE SOIL. THIS WATER WOULD THEN BE AVAILABLE FOR PLANT USE LATER IN THE SUMMER WHEN RUNOFF HAS COME TO A HALT.

THIS PRACTICE WORKS ON THE HIGH MOUNTAIN MEADOWS TO THE ADVANTAGE OF DOWNSTREAM IRRIGATORS. THE WATER IS RELEASED FROM THE SOIL OVER A PERIOD OF TIME THUS SUPPLEMENTING DOWNSTREAM FLOWS.

LETTING WATER RUN CONTINUOUSLY DOWN THE FURROW IS DETRIMENTAL TO THE CROP ON THE FIELD. MOST PLANT ROOTS REQUIRE A MIXTURE OF AIR AND WATER TO SURVIVE IN THE SOIL. WHEN WATER IS RUN OVER THE SOIL CONTINUOUSLY, THE RATE THE SOIL CAN TAKE IN WATER DIMINISHES AS THE SOIL BECOMES SATURATED WHICH ALSO ELIMINATES THE AIR. THIS CAUSES MOST OF THE WATER TO RUN OFF WITH VERY LITTLE STORED FOR LATER GROWTH. THIS RUNOFF ALSO INCREASES EROSION WHICH DECREASES NUTRIENTS IN THE SOIL. THE SATURATED SOIL THEN STOPS ROOT DEVELOPMENT FROM CONTINUING DOWN INTO THE SOIL PROFILE.

WHEN THE SPRING RUNOFF IS OVER, THIS PLANT CAN ONLY DRAW WATER OUT OF A ONE OR TWO FOOT SOIL DEPTH RATHER THAN THE THREE TO FOUR FOOT DEPTH IT SHOULD BE DRAWING FROM. PEAK CONSUMPTIVE USE OF WATER BY THE PLANT IN JULY WILL THUS LIMIT THE CROP GROWTH DUE TO THE SHALLOW ROOTING. A PLANT WITH A DEEPER ROOT DEPTH SHOULD LAST MUCH LONGER WITHOUT WILTING.

EXTRA SPRING RUNOFF SHOULD BE USED FOR OTHER BENEFICIAL USES.

"The Conservation of Water begins with the Snow Survey"

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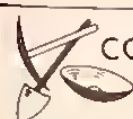
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WATER SUPPLY CONDITIONS as of

MAY 1, 1979

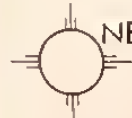
GOOD TO EXCELLENT WATER SUPPLIES ARE PROBABLE FOR COLORADO AND NEW MEXICO.

BELOW NORMAL PRECIPITATION FOR APRIL ENDED THE PATTERN OF THE LAST FEW MONTHS, BUT SNOW COURSES STILL INDICATED ABOVE AVERAGE WATER CONTENTS AT MOST SITES IN BOTH COLORADO AND NEW MEXICO. A RECORD SNOWPACK REMAINS IN SOUTHWESTERN COLORADO AND NORTHERN NEW MEXICO. THE SOIL MOISTURE CONDITIONS ARE GENERALLY GOOD AND RESERVOIR STORAGE IN MOST AREAS IS APPROACHING NORMAL.



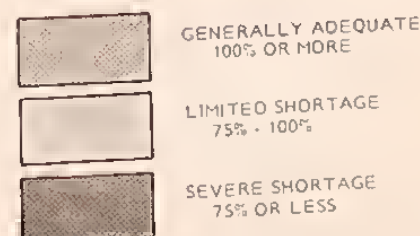
COLORADO --STREAMS IN COLORADO ARE FORECAST AT ABOVE NORMAL FLOWS WITH A RANGE OF 118 ON THE SOUTH PLATTE BASIN TO 211 PERCENT OF

NORMAL ON THE RIO GRANDE BASIN. THE SOUTHWESTERN PART OF COLORADO HAS EXPERIENCED SUBSTANTIAL MELT DURING APRIL BUT SNOWPACKS ARE STILL THE HIGHEST OF RECORD. STREAMFLOW INCREASES HAVE BEGUN AND SHOULD CONTINUE UNTIL MID-JUNE. FLOOD POTENTIAL IS STILL HIGH IN SOUTHWESTERN COLORADO DUE TO THE HEAVY SNOWPACKS AT ALL ELEVATIONS.



NEW MEXICO --RECORD SNOWPACKS WHICH STILL PERSIST IN NORTHERN NEW MEXICO TESTIFY TO THE EXCELLENT WATER SUPPLIES FORECAST FOR THE

AREA. STREAMFLOWS FOR THE MOST PART SHOULD BE TWICE THAT OF NORMAL. APRIL HAD BELOW NORMAL PRECIPITATION AND SIGNIFICANT MELT TOOK PLACE AT ALL ELEVATIONS. STREAMFLOWS BEGAN INCREASING THROUGHOUT THE AREA AND, SIMILAR TO COLORADO, SHOULD PEAK IN MID-JUNE. THE FLOOD POTENTIAL IS HIGH IN NORTHERN NEW MEXICO AND BECOMES MORE SIGNIFICANT AS TYPICALLY WARMER MONTHS APPROACH.



The map on this page indicates the most probable water supply as of the date of this report. Estimates assume average conditions of snow fall, precipitation and other factors from this date to the end of the forecast period. As the season progresses accuracy of estimates improve. In addition to expected streamflow, reservoir storage, soil moisture in irrigated areas, and other factors are considered in estimating water supply. Estimates apply to irrigated areas along the main streams and may not indicate conditions on small tributaries.

GUNNISON RIVER WATERSHED IN COLORADO



YOUR WATER SUPPLY

MAY SNOW SURVEYS INDICATE THAT SNOWPACKS ON THE GUNNISON WERE MAINTAINED BY SLOW MELT RATES WHICH HELD THEM AT A HIGHER LEVEL THAN IS NORMALLY SEEN AT THIS TIME OF YEAR. SNOWPACKS RANGE FROM 149 PERCENT ON SURFACE CREEK TO 161 PERCENT OF NORMAL ON THE GUNNISON WATERSHED. STREAMFLOWS WILL BE ABOVE NORMAL AND SHOULD BE VERY COMPARABLE TO THE 1973 FLOWS. RESERVOIR STORAGE IN THE AREA IS STILL NEAR NORMAL AT 91 PERCENT OF AVERAGE. SOIL MOISTURE CONDITIONS ARE GENERALLY GOOD WHICH WILL ALSO HELP WATER SUPPLY CONDITIONS.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Gunnison River inflow to Blue Mesa Reservoir (1)	1200	159	754.0
Gunnison River near Grand Junction (2)	2000	174	1150.0
North Fork of Gunnison (3)	400	153	262.0
Surface Creek near Cedaredge	22	145	15.2
Uncompahgre River at Colona	195	151	129.0

(1) Observed flow plus change in storage in Taylor Reservoir. (2) Observed flow plus change in storage in Blue Mesa, Morrow Point and Taylor Reservoirs. (3) Observed flow plus change in storage in Poncha Reservoir.

WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Ohio Creek	Exc.	Exc.
Slate River	Exc.	Exc.
Taylor River	Exc.	Exc.
Tomichi Creek	Exc.	Exc.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Name of Stream and/or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	1977 Year	1963-77 Average
Blue Mesa	830	274	276	320
Morrow Point	121	115	114	105
Taylor	106	43	28	60

LIST OF COOPERATORS

The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

STATE

Colorado State Engineer
Colorado State Soil Conservation Board
New Mexico State Engineer
Colorado State University Experiment Station
Rocky Mountain Forest and Range Experiment Station
New Mexico Dept. of Game and Fish

FEDERAL

Department of Agriculture
Forest Service
Soil Conservation Service
Department of Interior
Bureau of Reclamation
Geological Survey
National Park Service
Department of Commerce
NOAA, National Weather Service
Defense Department
Army Engineer Corps
National Aeronautics and Space Administration
Goddard Space Flight Center

INVESTOR OWNED UTILITIES

Colorado Public Service Company
Public Service Company of New Mexico

MUNICIPALITIES

City of Denver
City of Boulder
City of Greeley
City of Fort Collins

WATER USERS ORGANIZATIONS

Arkansas Valley Ditch Association
Colorado River Water Conservation District

IRRIGATION PROJECTS

Farmers Reservoir and Irrigation Company
San Luis Valley Irrigation District
Santo Maria Reservoir Company
Costilla Land Company
Uncompahgre Valley Water Users' Association
Twin Lakes Reservoir and Canal Company
Trinchera Irrigation Co.

CORPORATIONS

Aspen Skiing Corp.
Colorado Fuel and Iron Corp.
Climax Molybdenum Corp.
Copper Mountain Ski Area
Lake Elmore Corp.
Vail Associates, Incorporated
Vermejo Park Corp. (NM)
Taylor Lumber and Lard Company
Idarado Mining Corp.

PRIVATE CITIZENS

Otto Goemmer, Colorado
Moreno Ranch, New Mexico

SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Gunnison	13	106	161
Surface Creek	3	87	149
Uncompahgre	3	125	155

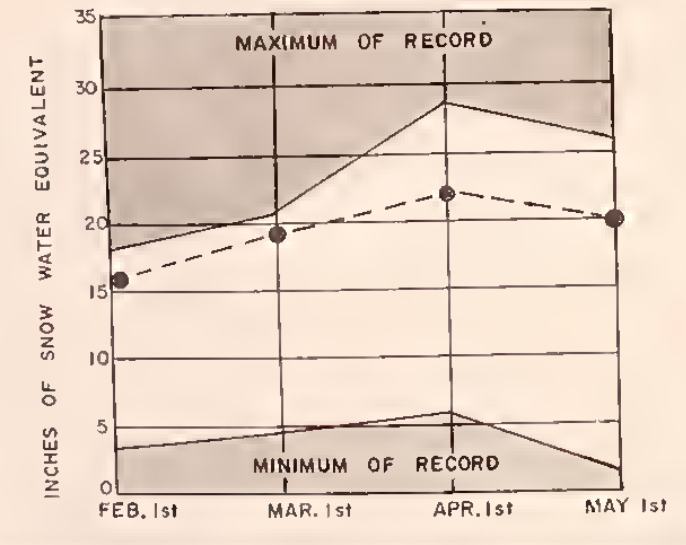
SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	CURRENT INFORMATION		PAST RECORD	
			WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG. 1963-77
GUNNISON BASIN						
<u>Gunnison River</u>						
Alexander Lake	4/27	73	33.2	37.2	21.5	
Blue Mesa	4/27	15	5.2	3.0	2.7	
Butte	4/26	56	22.9	20.3	12.3	
Cochetopa Pass (B)	4/27	25	7.4	2.7	4.0	
Crested Butte	4/26	37	21.6	15.2	7.2	
Keystone	4/26	63	29.0	27.4	17.0	
Lake City	4/25	28	8.2	4.1	4.6	
Mesa Lakes (B)	5/01	56	21.6	25.7	15.7	
McClure Pass	4/27	44	19.9	12.3	9.9	
Park Cone	4/27	25	9.4	8.7	6.8	
Park Reservoir	4/26	79	35.2	40.1	23.2	
Porphyry Creek	4/30	51	18.5	21.3	16.2	
Tomichi	4/30	30	11.8	12.1	10.3	
<u>Surface Creek</u>						
Alexander Lake	4/27	73	33.2	37.2	21.5	
Mesa Lakes	5/01	56	21.6	25.7	15.7	
Park Reservoir	4/26	79	35.2	40.1	23.2	
<u>Uncompahgre River</u>						
Ironton Park	4/26	34	13.8	11.6	8.0	
Red Mountain Pass	4/23	107	46.1	41.1	31.9	
Telluride (B)	4/26	17	6.0	0.0	2.5	

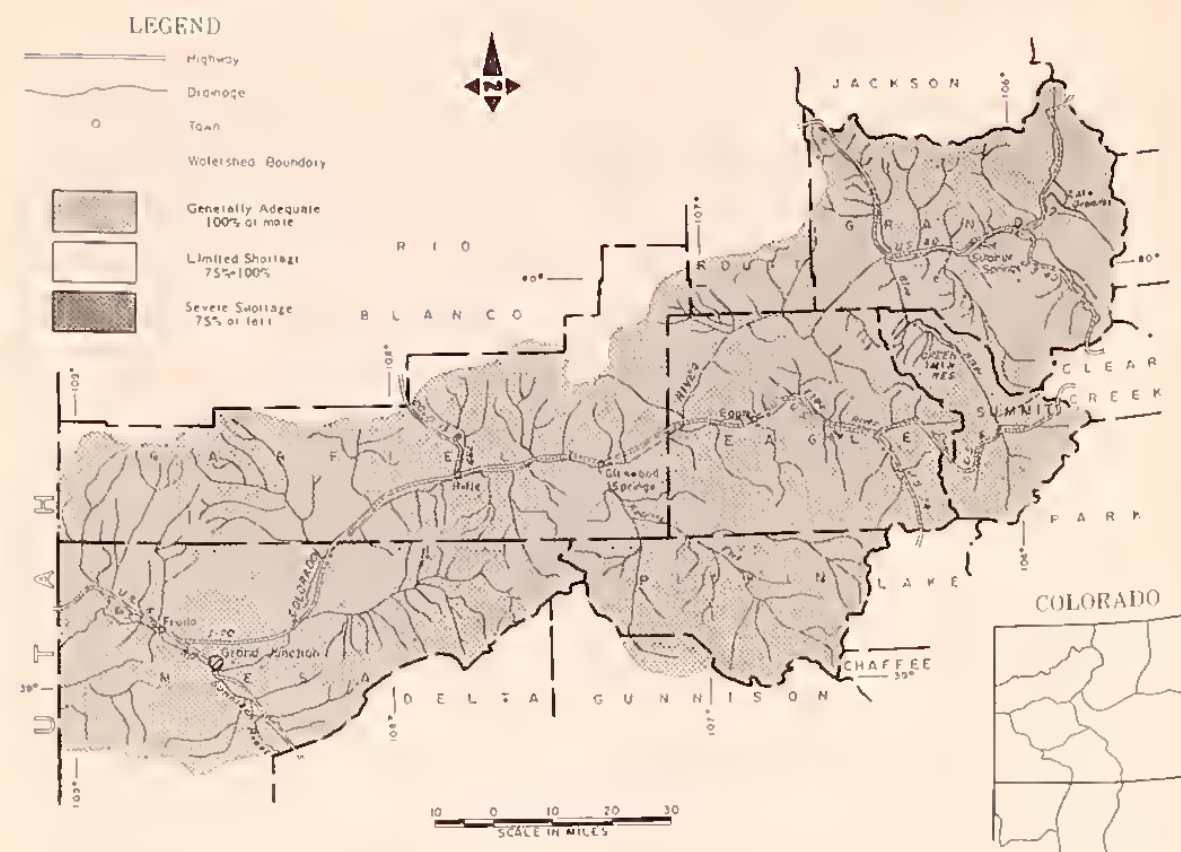
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(B)-On adjacent drainage.

WATERSHED SNOWPACK

Based on 5 Selected Snow Courses



COLORADO RIVER WATERSHED IN COLORADO



YOUR WATER SUPPLY

MOST AREAS IN THE UPPER COLORADO HAVE ABOVE NORMAL SNOWPACKS AND RANGE FROM 102 PERCENT ON THE BLUE RIVER TO 175 PERCENT ON THE WILLOW CREEK DRAINAGE. MELT HAS BEGUN AT MOST SNOW COURSES AND STREAMS WILL BEGIN TO RISE. WATER SUPPLIES SHOULD BE AVERAGE ON THE BLUE RIVER AND ABOVE AVERAGE IN THE REMAINDER OF THE UPPER COLORADO RIVER WATERSHED. RESERVOIR STORAGE IS UP SLIGHTLY AS COMPARED TO THIS TIME LAST YEAR. SOIL MOISTURE CONDITIONS ARE GOOD.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Blue River inflow to Dillon Reservoir	175	105	167.0
Blue River inflow to Green Mountain Reservoir (1)	320	112	287.0
Colorado River near Cameo (2)	3150	135	2336.0
Colorado River near Dotsero (3)	1780	125	1422.0
Colorado River inflow to Granby Reservoir (4)	290	133	218.0
Roaring Fork at Glenwood Springs (5)	950	136	697.0
Williams Fork near Parshall (6)	70	119	59.0
Willow Creek inflow to Willow Creek Reservoir	65	135	48.0
Eagle River below Gypsum	390	131	298.0

(1) Observed flow plus change in storage in Dillon Reservoir. (2) Observed flow plus change in storage in Green Mountain Reservoir. (3) Observed flow plus change in storage in Lake Granby Reservoir. (4) Observed flow plus change in storage in Lake Granby Reservoir. (5) Observed flow plus change in storage in Lake Granby Reservoir. (6) Observed flow plus change in storage in Lake Granby Reservoir.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Name of Stream and/or RESERVOIR	Usable Capacity	Usable Storage			
		This Year	1961 Year	1961-77 Average	
Dillon	251	161	109	199	
Granby	466	87	21	215	
Green Mountain	139	57	48	48	
Homestake	43	3	0	12	
Ruedi	101	51	59	57	
Vega	32	12	4	15	
Williams Fork	97	44	29	36	
Willow Creek	9	7	7	6	

WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Brush	Exc.	Avg.
Gypsum Creek	Exc.	Avg.

SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Blue River	7	83	102
Colorado	20	105	136
Plateau	3	89	146
Roaring Fork	6	110	140
Williams Fork	3	110	115
Willow	2	162	175

SNOW COURSE MEASUREMENTS

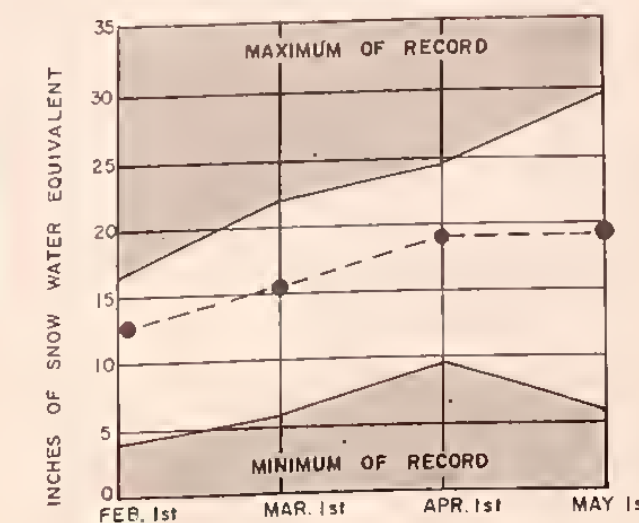
SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	CURRENT INFORMATION		PAST RECORD	
			WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG. 1963-77
COLORADO BASIN						
<u>Blue River</u>						
Blue River	4/27	12	4.2	1.7	5.5	
Fremont Pass	4/27	52	17.0	23.8	17.7	
Frisco Pass	4/27	52	17.0	23.8	17.7	
Grizzly Peak	4/25	54	18.8	26.3	19.5	
Hoosier Pass (B)	4/27	39	14.7	14.3	12.3	
Shrine Pass	4/27	52	18.0	25.6	19.0	
Snake River	4/25	17	4.8	4.0	3.5	
Summit Ranch	4/25	23	6.9	6.4	5.2	
<u>Colorado River</u>						
Arrow	4/27	42	16.7	12.0	11.5	
Berthoud Pass	4/30	48	19.9	17.6	15.7	
Berthoud Summit	4/27	61	23.9	24.5	20.5	
Cooper Hill	5/01	46	14.4	16.1	11.7	
Copper Mountain	4/26	41	12.2	18.2	---	
Fiddler Gulch	4/26	15	5.4	1.7	4.6	
Glenmar Ranch	4/26	32	11.2	9.4	7.7	
Core Pass	4/26	25	11.2	9.3	5.0	
Grand Lake	4/26	66	27.9	29.7	21.9	
Lake Irene	4/26	24	7.9	9.4	7.5	
Lapland	4/25	64	27.4	31.9	20.4	
Lulu	4/25	35	13.0	13.0	8.7	
Lynx Pass	4/27	6	2.3	0.0	1.7	
McKenzie Gulch	4/26	25	8.4	5.3	6.3	
Middle Fork	4/26	42	17.3	18.8	12.4	
Milner	4/27	28	11.6	10.6	6.3	
North Inlet	4/27	22	8.4	10.3	7.8	
Pando	4/26	29	14.4	10.2	7.3	
Phantom Valley	4/27	37	13.1	9.9	9.3	
Ranch Creek	4/28	34	11.5	11.9	7.4	
Tennessee Pass (B)	4/27	17	6.1	---	---	
Ute Pass	4/27	72	27.8	28.9	---	
Vail Mountain	4/26	40	13.4	15.2	12.6	
Vasquez	4/26	40	13.4	15.2	12.6	
<u>Plateau Creek</u>						
Nesa Lakes	5/01	56	21.6	25.7	15.7	
Park Reservoir	4/26	79	35.2	40.1	23.2	
Trickle Divide	4/26	87	38.6	41.4	26.4	
<u>Roaring Fork</u>						
Aspen	4/27	52	18.5	---	18.4	
Independence Pass	4/30	48	19.5	19.3	15.7	
Ivanhoe	4/24	53	19.8	24.4	18.3	
Kill	4/24	37	13.0	15.9	10.7	
Lift	4/27	56	22.2	---	18.6	
McClure Pass	4/27	44	19.9	12.3	9.9	
Nast	4/26	8	3.0	0.9	2.4	
North Lost Trail	4/27	39	16.6	10.3	8.6	
<u>Williams Fork River</u>						
Glenmar Ranch	4/26	15	5.4	1.7	4.6	
Jones Pass	4/30	42	16.6	20.7	15.6	
Middle Fork	4/26	25	8.4	5.3	6.3	
<u>Willow Creek</u>						
Cranby	4/26	23	8.6	4.8	4.4	
Willow Creek Pass	4/26	46	18.0	11.6	10.8	

NS-No survey.
(B)-On adjacent drainage.

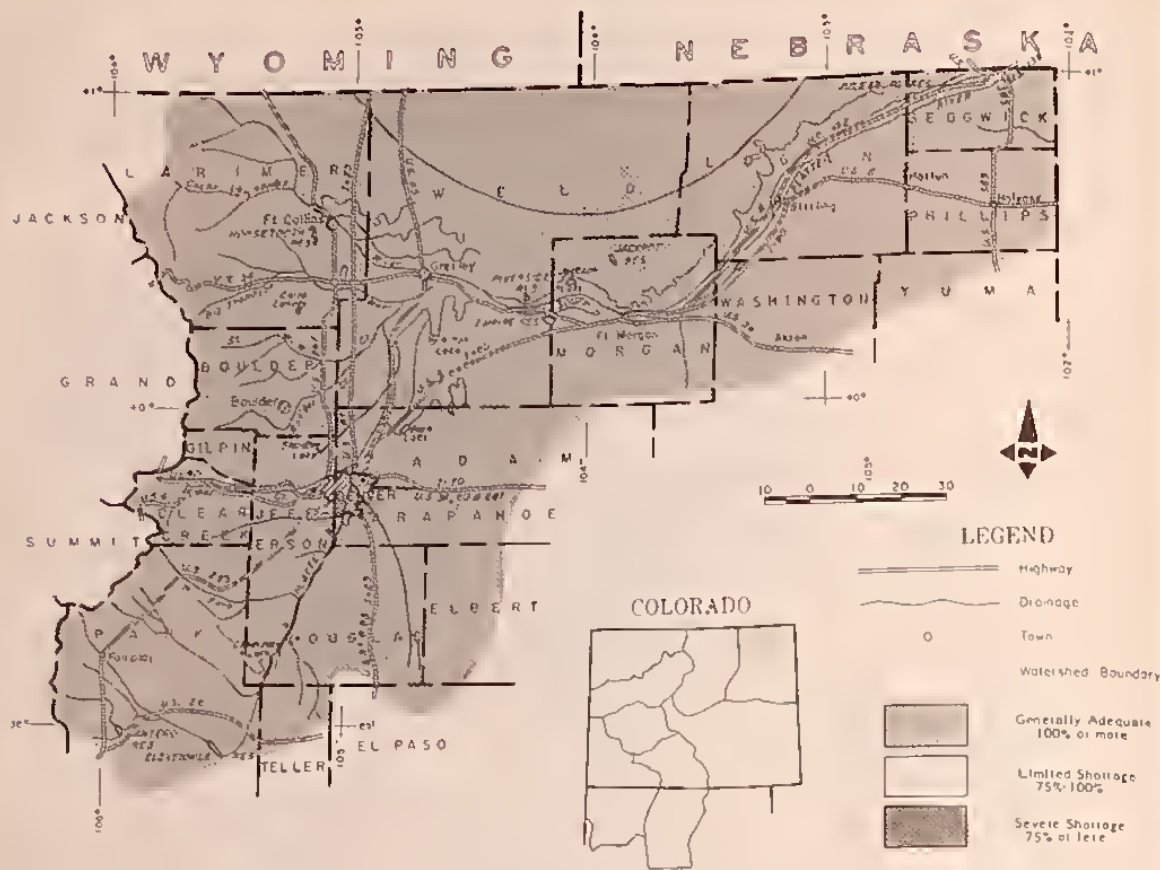


WATERSHED SNOWPACK

Based on 7 Selected Snow Courses



SOUTH PLATTE RIVER WATERSHED IN COLORADO



YOUR WATER SUPPLY

SLIGHTLY ABOVE AVERAGE TEMPERATURES THROUGH MOST OF APRIL HAVE DECREASED THE SNOWPACK AT A FAIRLY NORMAL RATE. SNOW WATER CONTENT RANGES FROM 136 PERCENT ON THE ST. VRAIN TO 98 PERCENT ON CLEAR CREEK. STREAMFLOWS SHOULD GENERALLY BE ABOVE NORMAL WITH THE EXCEPTION OF CLEAR CREEK, BEAR CREEK, AND THE SOUTH PLATTE WHICH SHOULD BE AVERAGE. RESERVOIR STORAGE IS NEAR AVERAGE AND SHOULD HELP PROVIDE ADEQUATE WATER SUPPLIES.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Big Thompson River at Drake (1)	122	120	102.0
Boulder Creek at Orodell	50	111	45.1
Cache La Poudre River at Canyon Mouth (2)	292	120	243.0
Clear Creek at Golden (3)	125	104	120.0
St. Vrain Creek at Lyons	90	126	71.6
Bear Creek at Morrison	28	100	28.0
South Platte River at South Platte	193	100	193.0

(1) Observed flow plus hydropower plants. (2) Observed flow minus from-basin diversions plus municipal and irrigation diversions. (3) Observed flow minus diversions through August 15. (4) On adjacent drainage.

WATER SUPPLY OUTLOOK

STREAM or AREA	Spring Season	Long Season
Coal Creek	Exc.	Avg.
North Fork of South Platte	Avg.	Fair
North Fork of Cache La Poudre	Exc.	Avg.
Ralston Creek	Exc.	Avg.
Rock Creek	Exc.	Avg.
South Platte from Greeley to Fort Morgan	Avg.	Avg.
South Platte from Fort Morgan to Sterling	Avg.	Avg.
South Platte below Sterling	Avg.	Avg.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and Reservoir	Utah Capacity	This Year	Last Year	1963-77 Average
Antero	16	16	15	14
Barr Lake	32	30	22	26
Black Hollow	8	4	3	4
Boyd Lake	44	38	16	38
Cache La Poudre	10	10	8	8
Carter Lake	109	103	96	103
Chambers Lake	9	3	4	4
Cheesman	79	49	30	52
Cobb Lake	34	4	0	14
Eleven Mile	98	91	83	88
Empire	38	34	30	32
Fossil Creek	12	8	7	9
Gross	43	16	15	22
Halligan	6	3	1	6
Horsetooth	144	114	59	119
Jackson	35	35	32	34
Julesburg	28	24	23	23
Lake Loveland	14	9	9	10
Lone Tree	9	8	7	7
Mariano	6	5	5	5
Marshall	10	9	3	6
Marston	17	15	16	16
Milton	24	20	13	16
Point of Rocks	70	70	69	67
Prewitt	33	29	10	23
Riverside	58	58	50	57
Standley	42	34	23	26
Terry	8	6	6	6
Union	13	13	10	11
Windsor	19	15	9	12



SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	1963-77 Average
Big Thompson	5	121	122
Boulder	3	90	99
Cache La Poudre	9	122	118
Clear Creek	5	90	98
Saint Vrain	3	152	136
South Platte	7	142	126

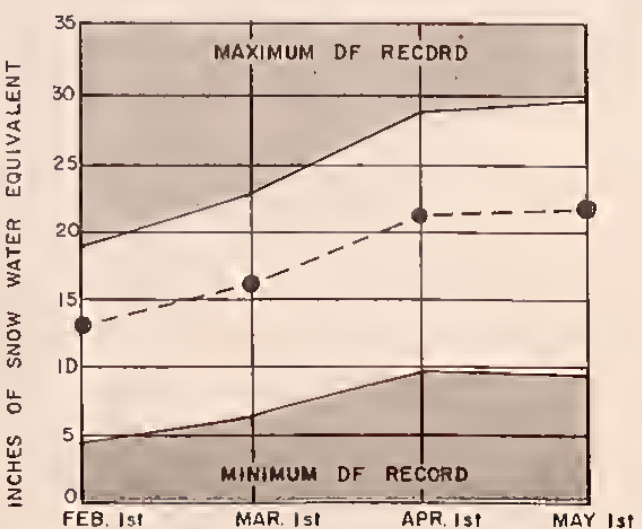
SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTENT (INCHES) LAST YEAR	1963-77 Average
SOUTH PLATTE BASIN					
Boulder Creek					
Baltimore	4/27	12	4.2	1.8	4.5
Boulder Falls	4/28	37	13.6	14.3	12.5
Lake Eldora	4/30	30	11.0	10.0	---
University Camp	4/28	48	17.3	22.7	18.4
Big Thompson River					
Bear Lake	4/29	54	21.3	---	---
Deer Ridge	4/30	9	3.0	0.5	2.7
Hidden Valley	4/28	28	11.1	7.1	10.0
Lake Irene (B)	4/26	66	27.9	29.7	21.9
Long's Peak	4/24	47	16.4	9.7	12.3
Two Mile	4/28	54	19.3	17.3	16.9
Willow Park	5/1	76	27.8	24.5	---
Cache La Poudre					
Bennett Creek	4/30	23	8.1	0.8	5.1
Big South	4/27	0	0.0	0.0	0.6
Cameron Pass	4/27	70	32.4	34.9	32.1
Chambers Lake	4/27	24	10.9	8.4	6.4
Deadman Hill	4/30	52	20.8	16.0	17.8
Hourglass Lake	4/30	26	9.6	4.0	6.4
Joe Wright	4/27	71	30.2	31.7	28.8
Lost Lake	4/27	36	13.3	11.4	9.6
Red Feather	4/27	22	7.2	1.6	5.5
Clear Creek					
Baltimore (B)	4/27	12	4.2	1.8	4.5
Berthoud Falls	4/27	33	12.2	10.4	11.9
Empire	4/27	25	8.9	6.6	7.4
Grizzly Peak (B)	4/25	54	18.8	26.3	19.5
Loveland Lift	Discontinued	---	---	---	---
Loveland Pass	4/25	35	12.4	17.8	14.6
St. Vrain River					
Copeland Lake	4/24	10	3.6	0.0	2.8
Ward	4/30	18	6.4	4.1	5.5
Wild Basin	4/24	46	17.0	13.7	11.5
South Platte River					
Bison Reservoir	4/24	14	5.4	0.0	---
Como	4/27	14	5.4	2.7	5.2
Geneva Park	4/27	0	0.0	0.0	2.1
Horseshoe Mountain	4/26	38	13.0	10.1	10.4
Hoosier Pass	4/27	39	14.7	14.3	12.3
Jefferson Creek	4/26	28	9.7	8.3	8.0
Mosquito	4/27	25	9.4	5.4	6.1
Trout Creek Pass	4/24	14	5.6	0.0	1.9

(A) - No survey. (B) - On adjacent drainage.

WATERSHED SNOWPACK

Based on 5 Selected Snow Courses



YAMPA, WHITE AND NORTH PLATTE RIVER WATERSHEDS IN COLORADO



YOUR WATER SUPPLY

SNOWPACK FIGURES FOR MOST OF THE AREA INDICATE WELL ABOVE AVERAGE ACCUMULATIONS RANGING FROM 122 PERCENT ON THE NORTH PLATTE RIVER TO 152 PERCENT ON THE ELK RIVER. STREAMFLOW FORECASTS WILL AVERAGE 123 PERCENT OF NORMAL WHICH IS A SLIGHT INCREASE OVER PREVIOUS FORECASTS. WATER SUPPLIES SHOULD BE EXCELLENT IN ALL OF THE WATERSHEDS.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

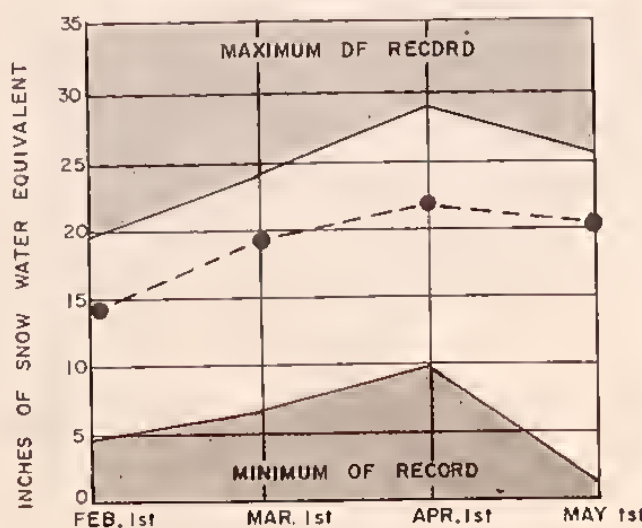
FORECAST POINT	Forecast	% of Average	1963-77 Average
Elk River at Clark	255	129	198.0
Laramie River near Woods	150	120	125.0
Little Snake River at Lily	470	135	349.0
North Platte River at Northgate	305	128	238.0
White River near Meeker	340	118	287.0
Yampa River near Maybell	1100	122	905.0
Yampa River at Steamboat Springs	330	121	273.0

WATER SUPPLY OUTLOOK

STREAM or AREA	Spring Season	Long Season
Canadian River	Exc.	Avg.
Hunt Creek	Exc.	Avg.
Illinois River	Exc.	Avg.
Michigan River	Exc.	Avg.
Oak Creek	Exc.	Avg.
Trout Creek	Exc.	Avg.

WATERSHED SNOWPACK

Based on 5 Selected Snow Courses



SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	1963-77 Average
Elk	2	101	152
Laramie	3	131	129
North Platte	5	108	122
White	2	85	129
Yampa	8	85	129

SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTENT (INCHES) LAST YEAR	1963-77 Average
NORTH PLATTE BASIN					
Laramie River					
Deadman Hill	4/30	52	20.8	16.2	17.8
McIntyre	4/26	40	14.4	9.1	10.7
Roach	4/26	71	26.8	22.2	19.5
North Platte River					
Cameron Pass	4/27	73	32.4	34.9	32.1
Columbine Lodge	4/26	52	23.8	30.8	20.7
Northgate	4/27	14	4.4	2.2	4.1
Park View	4/26	34	12.2	4.6	6.8
Willow Cr. Pass (B)	4/26	46	18.0	11.6	10.8
YAMPA BASIN					
Elk River					
Elk River	4/25	55	22.0	22.9	16.1
Hahn's Peak	4/25	36	16.2	15.0	9.3
White River					
Burro Mountain	4/27	45	18.3	21.9	14.9
Rio Blanco	4/26	36	14.4	16.7	10.4
Yampa River					
Bear River	4/24	29	9.9	11.2	7.3
Columbine (B)	4/26	52	23.8	30.8	20.7
Crosho	4/24	39	13.8	17.3	11.8
Dry Lake	4/27	56	25.9	30.2	17.8
Lynx Pass (B)	4/25	35	13.0	13.0	8.7
Rabbit Ears	4/26	78	30.7	38.8	27.1
Tower	4/27	142	65.2	79.2	53.5
Yampa View	4/27	38	15.9	12.4	9.8

(A) - No survey. (B) - On adjacent drainage.



ARKANSAS RIVER WATERSHED IN COLORADO



YOUR WATER SUPPLY

PRECIPITATION OVER THE ARKANSAS BASIN WAS BELOW NORMAL. TEMPERATURES DUE TO GENERALLY CLEAR SKIES WERE SLIGHTLY ABOVE NORMAL. THIS CENERALLY GOOD WEATHER BROUGHT SIGNIFICANT MELT TO MOST OF THE BASIN. THE ARKANSAS AT SALIDA AND PUEBLO HAVE SNOWPACK FIGURES BELOW LAST MONTH BUT STILL ABOVE NORMAL. THE REMAINDER OF THE BASIN IS SIGNIFICANTLY BELOW NORMAL. WATER SUPPLIES SHOULD STILL BE GOOD IN MOST OF THE BASIN. SOIL MOISTURE CONDITIONS ARE MOSTLY GOOD WITH THE EXCEPTION OF THE AREA AROUND ORDWAY WHICH IS POOR. RESERVOIR STORAGE IMPROVED ONLY SLIGHTLY OVER LAST YEAR.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Arkansas River near Pueblo (1)	377	145	260.0
Arkansas River at Salida (2)	370	128	288.0
Cucharas River near La Veta	11	121	9.1
Huerfano River near Redwing	22	164	13.4
Purgatoire River at Trinidad (3)	40	122	32.8

(1) Plus change in storage in Pueblo Reservoir. (2) Observed flow plus change in storage in Clear Creek, Twin Lake and Turquoise Reservoirs minus diversion through Park Canyon, Rosillos, Divide, Twin Lake and Overlook Tunnels and Elgin, Pleasant Pass, Bente and Colleton ditches. (3) Change in storage in Trinidad Reservoir.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Adobe	62	0	0	11
Clear Creek	11	2	-	7
Cucharas	40	0	0	1
Great Plains	150	0	0	42
Horse Creek	27	14	0	4
John Martin	621	15	0	39
Neredith	42	0	0	9
Model	15	-	0	1
Pueblo	351	38	4	-
Turquoise	121	73	43	30
Twin Lakes	58	17	14	22

WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Apishapa River	Exc.	Avg.
Fountain Creek	Exc.	Avg.
Crape Creek	Exc.	Avg.
Hardscrabble Creek	Exc.	Avg.
Monument Creek	Exc.	Avg.

SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Arkansas	11	112	119
Cucharas	2	--	84
Purgatoire	1	120	22

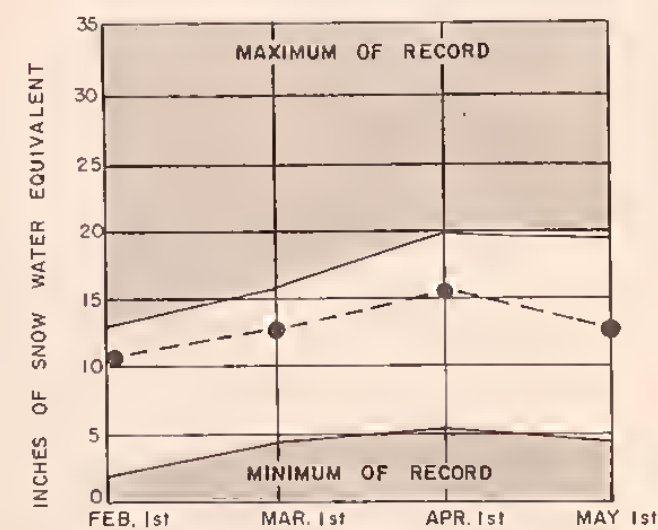
SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	CURRENT INFORMATION		PAST RECORD	
		SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	1963-77 AVERAGE
ARKANSAS BASIN					
<u>Arkansas River</u>					
Bigelow Divide	4/27	22	6.4	0.0	4.7
Brumley	NS	--	--	--	--
Cooper Hill (B)	5/01	46	14.4	16.1	11.7
East Fork	4/27	26	7.6	8.7	7.3
Four Mile Park	4/28	5	2.0	0.0	1.6
Fremont Pass	4/27	52	17.0	23.8	17.7
Garfield	4/30	26	10.7	6.6	9.5
Hermit Lake	4/26	18	7.5	0.0	6.8
Monarch Pass	4/30	43	17.4	16.7	15.3
South Colony	4/26	77	34.8	--	--
Tennessee Pass	4/28	34	11.5	11.9	7.4
Twin Lakes Tunnel	4/30	34	13.2	15.7	9.5
Westcliffe	4/26	9	3.6	0.0	2.5
<u>Cucharas River</u>					
Apishapa	4/27	0	0.0	0.0	3.7
Cucharas Creek	4/27	16	4.6	0.0	--
La Veta Pass (B)	4/27	14	5.8	0.0	3.2
<u>Purgatoire River</u>					
Bourbon	4/30	2	0.7	0.5	2.7
Whiskey Creek	4/30	10	3.0	--	--

NS-No survey.
(B)-On adjacent drainage.

WATERSHED SNOWPACK

Based on 5 Selected Snow Courses

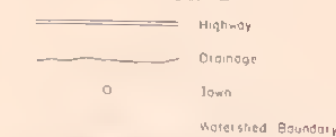


RIO GRANDE WATERSHED IN COLORADO AND NEW MEXICO

COLORADO



LEGEND



RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
COLORADO				
Continental	27	7	5	5
Platoro	75	15	13	10
Rio Grande	51	9	8	19
Sanchez	103	9	6	11
Santa Maria	45	8	4	7
Terrace	18	2	1	7
NEW MEXICO				
Avalon	5	2	2	1
Caballo	344	61	40	66
Conchas	273	91	98	122
El Vado	195	52	80	52
Elephant Butte	2195	290	198	348
McMillan	34	6	16	12
Sumner	11	44	3	42

WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
COLORADO		
Saguache Creek	Exc.	Exc.
Sangre de Cristo Cr.	Exc.	Exc.
Trinchera Creek	Exc.	Exc.
NEW MEXICO		
Embudo Creek	Exc.	Exc.
Mora River	Exc.	Exc.
Nambe Creek	Exc.	Exc.
Rio Ojo Caliente	Exc.	Exc.
Rio Pueblo de Taos	Exc.	Exc.
Santa Fe Creek	Exc.	Exc.

STREAMFLOW FORECASTS (1000 Ac. Ft.)

FORECAST POINT	Forecast	% of Average	1963-77 Average
COLORADO (April-September)			
Alamosa Creek above Terrace Reservoir	120	188	63.6
Conejos River near Mogote (1)	345	188	183.0
Culebra Creek at San Luis (2)	40	261	15.3
Rio Grande at 30 Mile Bridge (3)	240	202	119.0
Rio Grande near Del Norte (3)	970	210	462.0
South Fork of Rio Grande at South Fork	241	203	119.0
NEW MEXICO (March-July)			
Costilla Creek at Costilla (4)	43	279	15.4
Jemez River near Jemez	75	225	33.3
Pecos River at Pecos	106	280	38.1
Red River at Mouth near Questa	50	184	27.2
Rio Chama at El Vado	400	226	177.0
Rio Grande at Otowi (5)	1450	292	497.0
Rio Grande at San Marcial (5)	1200	358	335.0
Rio Hondo near Valdez	23	180	12.8
Santa Cruz River at Cundiyo	24	198	11.6

(1) Observed flow plus change in storage in Alamosa Reservoir. (2) Observed flow plus change in storage in Santa Fe Reservoir. (3) Observed flow plus change in storage in Santa Maria, Rio Grande and Conchita Reservoirs. (4) Observed flow plus change in storage in El Vado and Albuquerque Reservoirs. (5) Observed flow plus change in storage in El Vado and Albuquerque Reservoirs.

SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	CURRENT INFORMATION		PAST RECORD	
		SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	1963-77 AVERAGE
RIO GRANDE BASIN - NM					
<u>Pecos River</u>					
Panchuela	4/26	1	0.4	--	--
<u>Red River</u>					
Red River #2	4/27	17	6.1	0.0	--
<u>Rio Chama</u>					
Bateman	4/25	40	15.4	--	--
Chamita	4/24	23	10.1	0.0	0.7
<u>Rio Grande</u>					
Hopewell	4/27	53	25.2	11.0	13.3
Palo	4/27	7	2.7	--	--
Payrole	4/27	18	7.3	--	--
Quemazon	4/26	30	10.8	0.0	--
Rio En Medio	4/25	26	11.3	2.5	3.2
Senorita Divide	4/26	2	1.0	--	--



Upper San Juan SNOTEL Site - April 1978

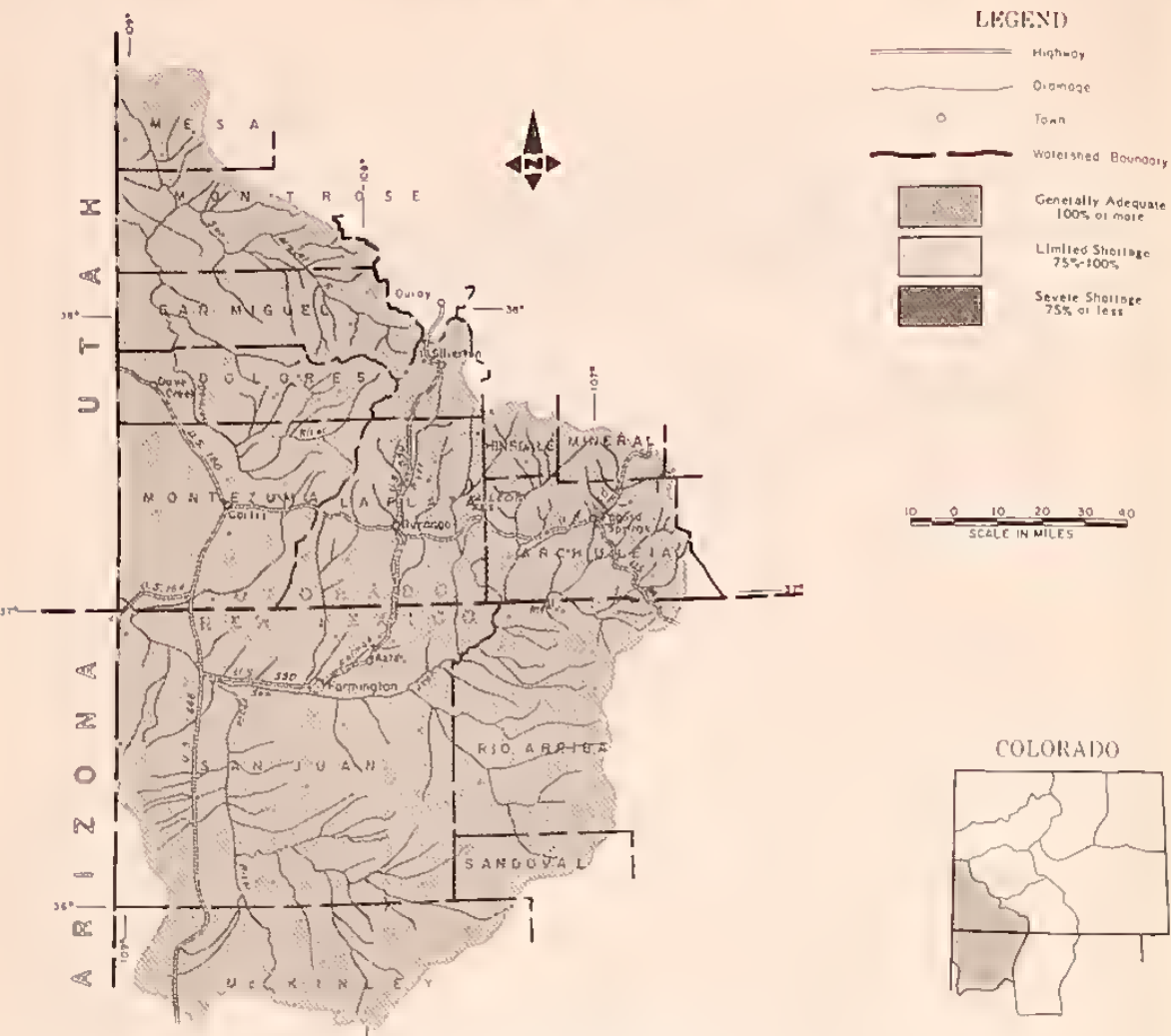


Upper San Juan SNOTEL Site - April 1979

NS-No survey.
(B)-On adjacent drainage.



SAN MIGUEL, DOLORES, ANIMAS AND SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO



YOUR WATER SUPPLY

SNOWPACK MEASUREMENTS TAKEN NEAR THE FIRST OF MAY INDICATE WATER CONTENTS MUCH HIGHER THAN NORMAL FOR THIS TIME OF YEAR. SNOWPACKS HAVE MELTED AT BELOW NORMAL RATES DUE TO COOL, CLOUDY WEATHER DURING THE LAST PART OF APRIL. LOW ELEVATION SNOW IS BEGINNING TO DISAPPEAR BUT DEEP SNOWPACKS STILL REMAIN IN THE MAJOR WATER PRODUCING AREAS. STREAMFLOWS HAVE INCREASED AND SHOULD CONTINUE TO DO SO UNTIL MID-JUNE. THE ANIMAS RIVER AT DURANGO SHOULD REACH A PEAK OF 8,200 CUBIC FEET PER SECOND ON ABOUT JUNE 15. WATER SUPPLIES WILL BE EXCELLENT THROUGHOUT THE SAN JUAN BASIN.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Animas River at Durango	800	188	425.0
Dolores River at Dolores	430	185	233.0
La Plata River at Hesperus	45	191	23.5
Los Pinos River at Bayfield (1)	360	176	204.0
Mancos River near Towac (2)	52	237	21.9
Inflow to Navajo River (1 & 3)	1400	230	608.0
Piedra Creek at Arboles	455	226	201.0
San Juan River at Carracas	770	208	370.0
San Miguel River at Placerville	225	181	124.0

(1) Observed flow plus change in storage in Vallecito Reservoir. (2) March-July. (3) April-July.

WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" with Respect to Usual Supply

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Florida River	Exc.	Exc.
Hermosa Creek	Exc.	Exc.
West Dolores River	Exc.	Exc.
Williams Creek	Exc.	Exc.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin of Stream and/or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Groundhog	22	9	11	12
Jackson Gulch	10	3	4	7
Lemon	40	9	7	23
Navajo	1696	1260	1030	741
Vallecito	126	33	39	66

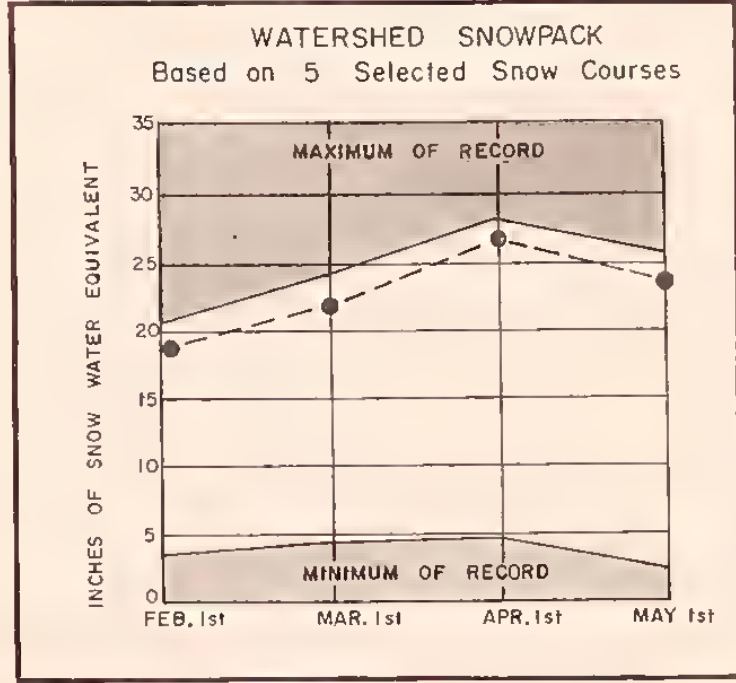
SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Animas	7	184	219
Dolores	5	153	191
San Juan	4	209	214

SNOW COURSE MEASUREMENTS

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG. 63-77
SAN JUAN-DOLORES BASIN					
Animas River					
Cascade	4/26	49	21.5	0.0	5.3
Lemon	4/24	43	17.1	0.0	3.7
Mineral Creek	4/23	60	24.9	16.6	11.5
Molas Lake	4/23	48	18.7	13.0	8.3
Purgatory	4/26	88	39.4	---	18.8
Red Mt. Pass (B)	4/23	107	46.1	41.1	31.9
Silverton Sub-Sta.	4/23	24	10.1	0.0	1.6
Spud Mountain	4/23	98	46.1	29.2	21.8
Dolores River					
Groundhog	4/28	29	14.3	---	---
Lizard Head	4/25	58	25.0	21.2	14.7
Lone Cone	4/27	41	18.8	12.0	10.0
Ophir Loop	4/26	60	23.6	15.6	---
Rico	4/25	10	3.9	0.0	1.3
Snow Spur	4/25	60	23.1	---	---
Telluride	4/26	17	6.0	0.0	2.5
Trout Lake	4/26	45	18.6	14.0	9.3
Houser Cow Camp	4/30	20	9.4	---	---
San Juan River					
Chama Divide (B)	NS	---	---	0.0	0.0
Chamita (B)	4/24	23	10.1	0.0	0.7
Upper San Juan	4/26	110	56.5	28.3	24.9
Wolf Cr. Pass (B)	4/30	88	46.8	22.9	22.8
Wolf Cr. Summit	4/26	125	56.4	30.1	30.8
La Plata	4/26	57	28.4	---	---
Mancos T-Down	4/27	52	25.5	---	---

NS-No survey.
(B)-On adjacent drainage.



WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

-GUNNISON RIVER WATERSHED

Describes water supply conditions in Delta, Gunnison, Cimarron, Shavano, and Uncompahgre Soil Conservation Districts.

-COLORADO RIVER WATERSHED

Describes water supply conditions in DeBeque, Plateau Valley, Lower Grand Valley, Bookcliff, Eagle County, Middle Park, Glade Park, Upper Grand Valley, South Side, and Mt. Sopris Soil Conservation Districts.

-SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Fort Collins, Big Thompson, Langmont, Boulder Valley, Jefferson, Teller-Park, Douglas County, Morgan, Kiowa, West Arapahoe, West Adams, East Adams, Platte Valley, Southeast Weld, and West Greeley Soil Conservation Districts. Also describes water supply conditions in Sedgwick, South Platte, Hoxton, Peetz, Padroni, Morgan, Rock Creek, and Yuma Soil Conservation Districts.

-YAMPA, WHITE AND NORTH PLATTE RIVERS WATERSHED

Describes water supply conditions in Yampa, Moffat, West Routt, East Routt, North Park, White River, and Douglas Creek Soil Conservation Districts.

-ARKANSAS RIVER WATERSHED

Describes water supply conditions in Lake County, Upper Arkansas, Fremont, Custer County Divide, Fountain Valley, Black Squirrel, Central Colorado, Turkey Creek, Pueblo, Bessemer, Olney Boone, Cheyenne, Upper Huerfano, Stonewall, Spanish Peaks, Purgatoire, Branson Trinchera, Western Baco, Southeastern Baco, Two Buttes, Bent, Timpas, Northeast Prowers, Prowers, Kiowa County, West Otero, East Otero, Prairie, Hi Plains, and Double El Soil Conservation Districts.

-RIO GRANDE WATERSHED

Describes water supply conditions in Rio Grande, Center, Conejos, Mosca Hooper, Mt. Blanco, Sanchez, and Culebra Soil Conservation Districts. Also describes water supply conditions in Upper Chama, East Rio Arriba, Toos, Lindrith, Jemez, Santa Fe - Pojoaque, Sandoval, Tijeras, Cuba, and Edgewood Soil Conservation Districts.

-DOLORES, SAN JUAN, AND ANIMAS RIVERS WATERSHED

Describes water supply conditions in San Miguel Basin, Dove Creek, Dolores, Mancos, LaPlato, Pine River, San Juan, San Miguel Basin, and Glade Park Soil Conservation Districts.